argusX1®

Quick Start Manual

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Short operating instruction for
Bio-Imaging-Control-Software

argus X1

Version 4/5

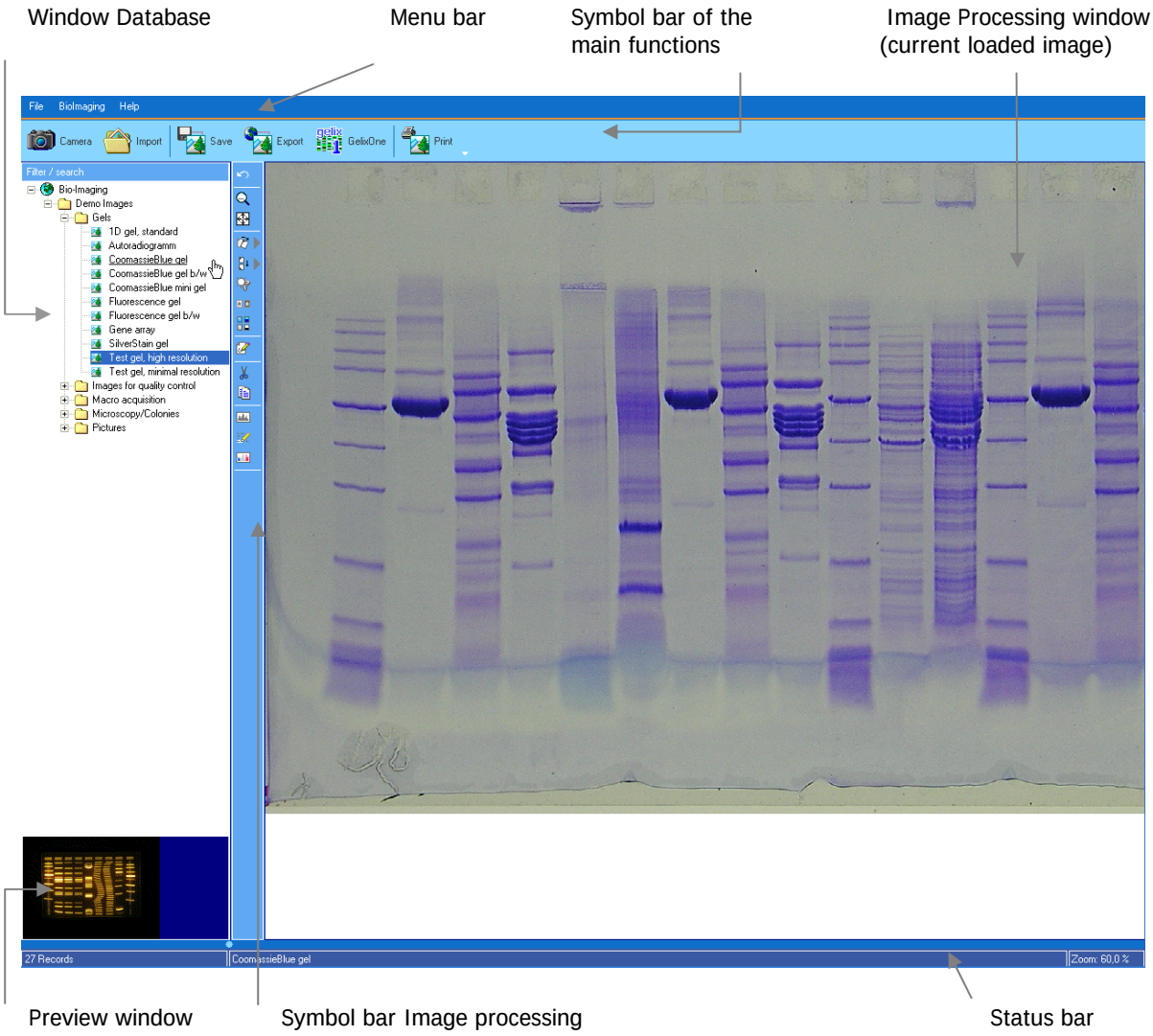
To this means of work:

This short operating instruction is meant for first and re-users to enable them a faster start with the argusX1 software made by biostep.

Start of the program / Image creation

After having installed the software properly (see separate installation instructions), press the button *argus X1* on the desktop or go over the program menu of Windows for starting the software.

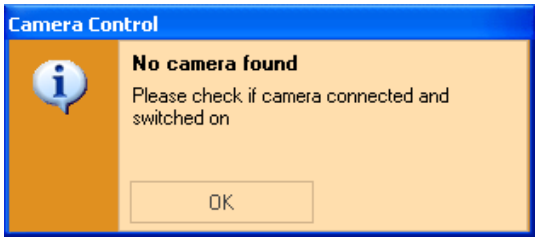
After that, the program window of argusX1 appears on the monitor.



The following cameras can be controlled with argusX1, if their internal controller software has been modified by biostep:
Olympus C-2040, C-3040, C-4040, C-4000, C-750, C-5050, C-5060, C-7070, C-8080

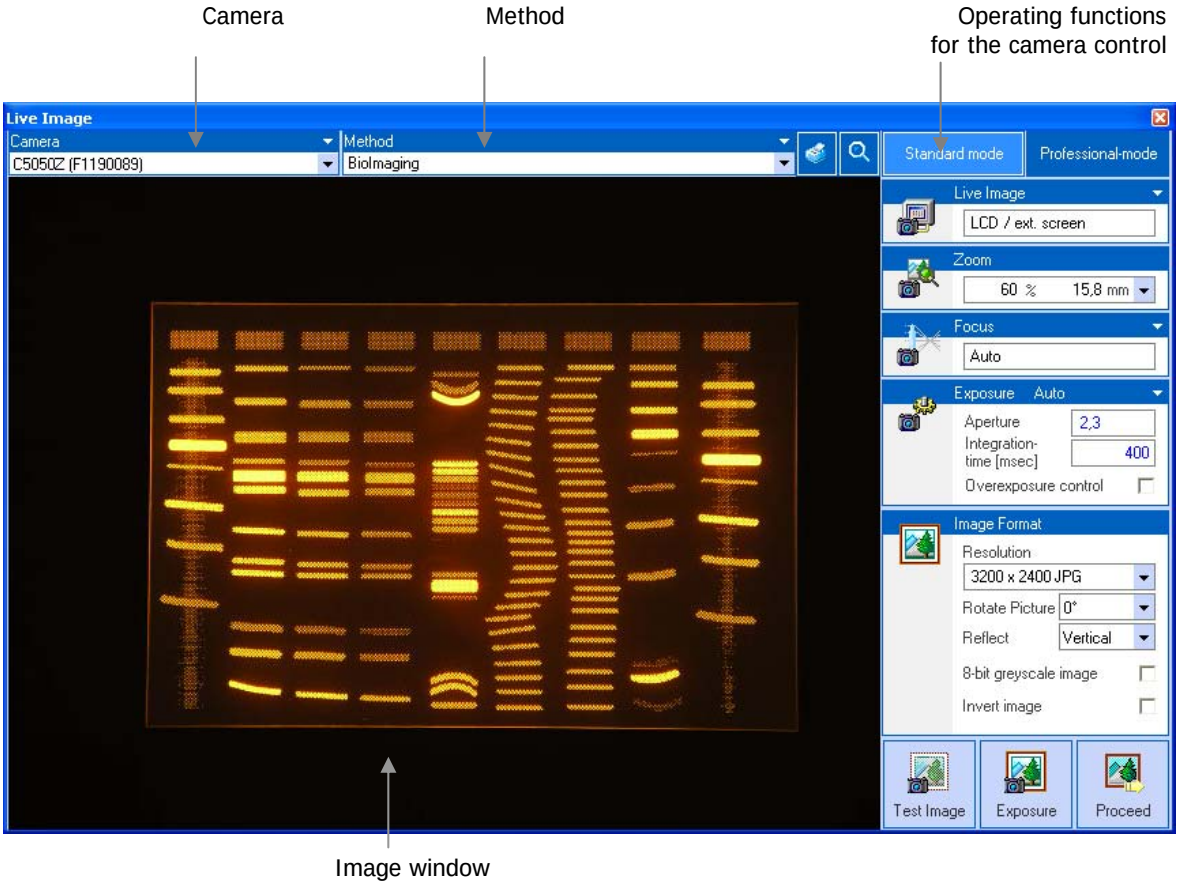
For activating the camera, put the **choice switch of the camera on exposure mode (e.g. A/S/M etc)** and click on the button C*amera* in the software.

You are shown the following error message if the camera is not switched on.
In this case, please close the software, switch on the camera and restart argusX1.



The exposure window is divided into 4 ranges:

- Camera
- Method
- Operating functions for the camera control
- Image window



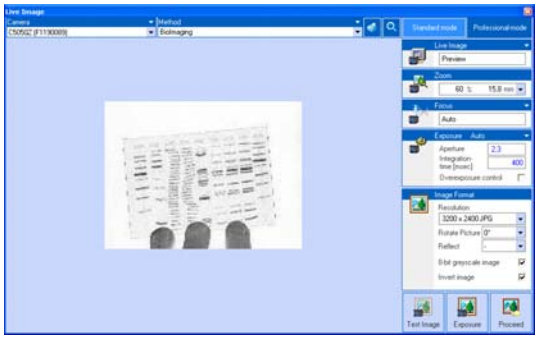
The camera now is in an operational condition. Dependent on the preset mode in the field *Live Image* you are now able to see a preview of your image.

With *Preview image*, you are shown kind of a Live image, which is represented with a **low resolution**, 320 x 240 pixels. Due to the restricted speed of transfer, you get a new image only every other second. **This function primarily serves for the orientation of the gels/blots on the transilluminator and the setting of the zoom range.**

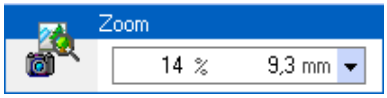
Beside the possibility to control the zoom in the live image mode, the following functions have a direct influence on the image acquisition:

- Rotate image
- Reflect image
- 8 Bit greyscale image
- Invert image

In the image on the right, the **movement of your gels/blots into the middle of the image** is shown.
If you work with a tripod, you can move the position of your camera, too. This is also valid for users who work with a set-top dark hood that is simply placed on a transilluminator.
In case you see no image at all, please check the lighting conditions first – switch on the transilluminator! (At this point it is sufficient to recognise the outlines of the gels.)



Adjust the **zoom** now. With this function, the image area is resized to the sample which has to be exposed. As all cameras controllable by argusX1 are equipped with motor zoom lenses, the zoom value can be set in the software.



With the function ***LCD / ext. Monitor***, the LCD monitor of the camera or a monitor connected with the camera (socket *A/V – Out*) is activated. This enables a clearly faster live image. The display at the PC is deactivated than.

If the live image function ***Preview off*** is activated, the live image is switched off and with the button *Test image* you can create a preview image.

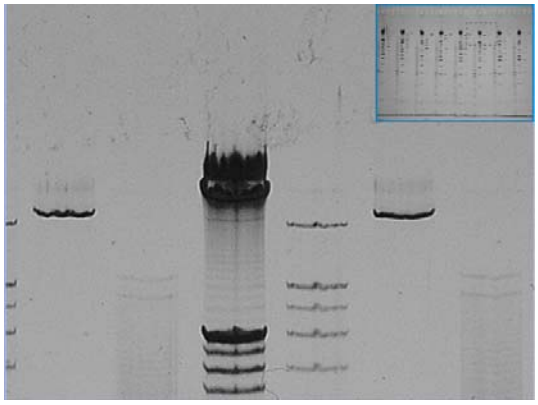
Should the light intensity be insufficient, please shift from the live image mode into the test image mode.

Therefore, use the button ***Test Image***. Afterwards, a single image is generated, in which the optimal integration time is designated by the camera, i.e. the camera integrates the light information to a representable image – also under unfavourable light circumstances (prerequisite: Exposure automatic). Now, you can also move the gel/blot however, the test image has to be repeated until the perfect position for the image is found.

Nevertheless, the **Test Image is no live image function** – it is used as **control if the chosen settings guarantee a high-quality image acquisition**.
A resolution of 640 x 480 pixels is preset for the Test Image in order to transfer the image without a noticeable time delay that is caused at high-resolution image through the transfer process from the camera to the PC.

Focusing

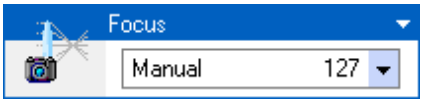
As mentioned above, the function *Test Image* only offers an average image quality according to the limited speed – however, after this you can already judge whether the image will be keenly portrayed at the following exposure or not (one criterion is e.g. the separation of the bands). You can also zoom in an area with rectangle in the preview image and view the edge sharpness at a selected structure.



Depending on your way of working, the result of this first attempt will be different. When working with a tripod and sufficient lighting conditions in a darkroom hood, the ***Autofocus*** of the camera will provide the correct settings and you can work on immediately.

The activation of the autofocus will be carried out in the field Focus.

When **using a dark hood** it can happen (depending on the lighting conditions within the hood) that the autofocus does not provide any usable results so that you have to correct it manually.



In this case choose the option ***Manual*** and a new value in the field Focus and then confirm your settings with the button Test Image. Repeat this process until the result is satisfying.

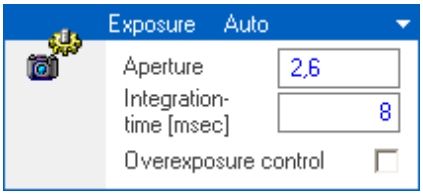
Due to the fact that the focus value depends on the zoom, you can not use the manual focus value for all applications. Should your further gels/blots have almost the same size, you can use the determined focus value as a reference value.

This reference value and all other settings in the operating functions can be **saved as a method.** In this way, you can recall this method at the next gel of the same type and all optimal settings are immediately at your disposal.

Open the menu window ***Methods*** with a click of the left mouse button on the white triangle and choose the function ***Save as new method***.
The current chosen parameters and settings are applied as new method and a standardised basic name (structure: new method, date, time) is assigned to this method. You can change this basic name. Please note that you must confirm the new name with the function ***Save changes*** **otherwise, the old method name remains.**

One of your created methods can be defined as standard method. This definition can be changed anytime by appointing another method as standard. You should always us the most frequently used method as standard as this will be automatically loaded with the start of the exposure window.

The function ***Exposure*** contains the settings for the aperture and integration time (exposure time).

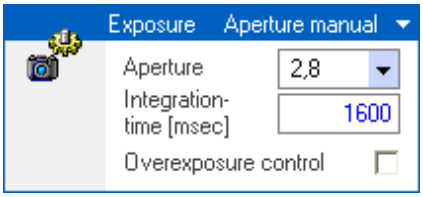


4 options are available:

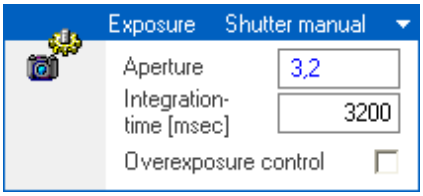
The exposure automatic (function ***Auto***) automatically controls the "cooperation" of aperture and integration time basing on the results of the exposure measurement. This means that a combination of both is set which is applicable with the measured light circumstances. These values are indicated as blue numerical values in the function range *Aperture* and *Integration time.*

The semi-automatic functions ***Aperture manual*** and ***Shutter manual*** require one manual value each, the other value is calculated by the system, based on the exposure measurement.

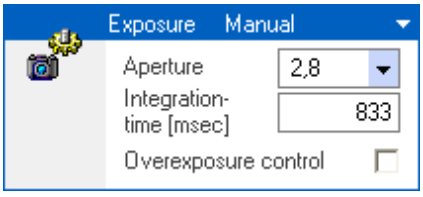
With the function *Aperture manual* the integration time is automatically determined in dependence on the manual set value of the aperture and it is shown as blue information value



Conversely, with the function *Shutter manual* the aperture is automatically determined in dependence on the manual set value of the time and it is shown as blue information value.

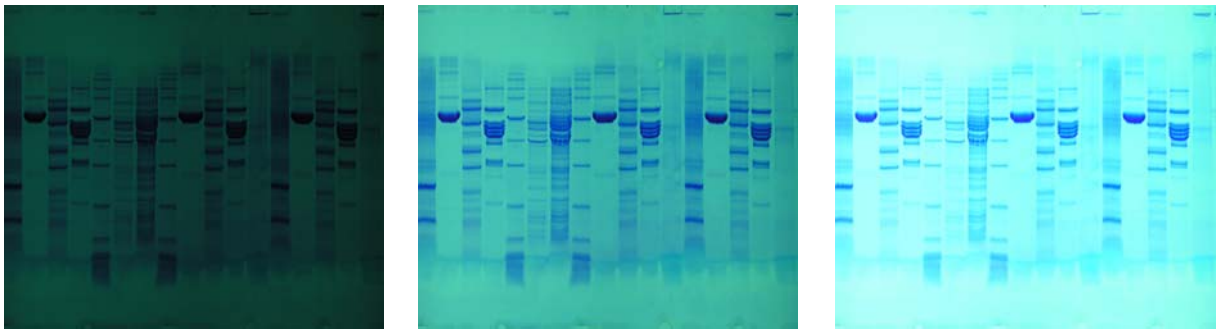


The completely manual control of the aperture and integration time can be realised by the function ***Manual.*** In this function, you can insert values in dependence on the value range of the used camera, optimise them step-by-step and save them in a method. Due to this, the manual values are also reproducibly available for further exposures.



With this function you can reach the maximum of the detection sensitivity at light-weak gels (fully opened aperture, longest integration time)

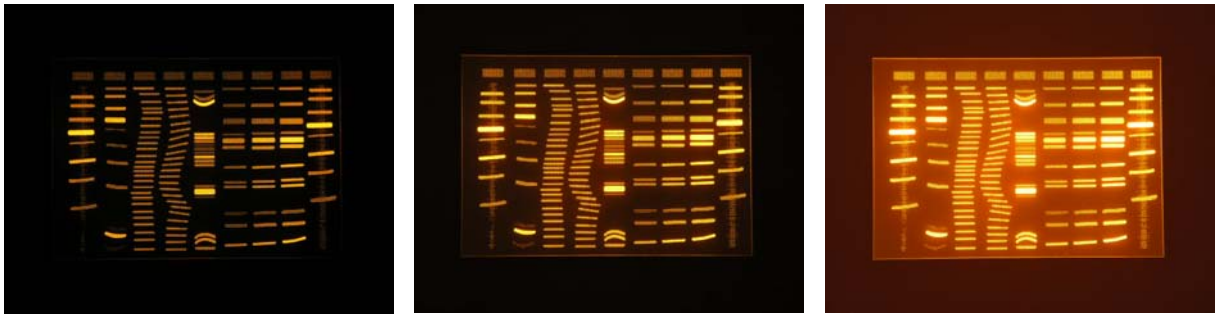
In order to look at the effects of the setting changes, it is necessary to generate a new image with the new parameters. Therefore, use the function *Test Image*.



The presented sample (CoomassieBlue gel) was taken with different integration times 50ms, 250ms, 769ms (left to right), all other parameters were constant.

Except the modification of the direct exposure settings, argusX1 offers you the function ***Over-/Underexposure*** for the improvement of the image acquisition. This function has only influence on the acquisition in the context of the exposure functions *Auto*, *Aperture manual* und *Shutter manual.*

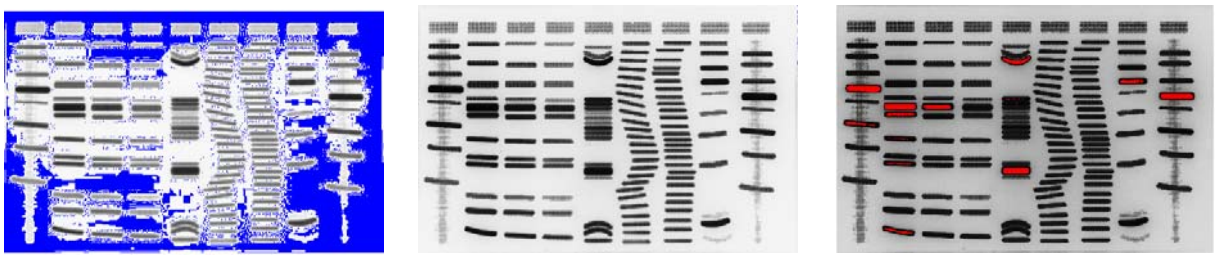
The function *Over-/Underexposure* is a manual exposure control with a value range of ±2 exposure levels. Set the values in the direction in which the camera should change the exposure. Use the values > 0 should the exposure become lighter; use the values < 0 should it become darker.



The sample (test gel) was taken with the exposure levels -2, 0 and +2 (left to right). All other parameters were constant.

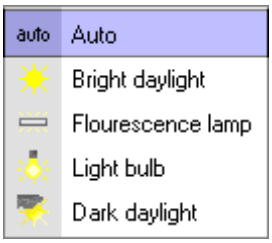
Using the function *Over-/Underexposure* only makes sense if your work with exposure automatic and do not want to use any manual settings for *Aperture* and *Integration time*.

With the function Exposure control, areas in the image can be determined and displayed which are over- or underexposed. The parameters for this function can be changed in the menu *Settings* under *Image processing| Exposure control*.



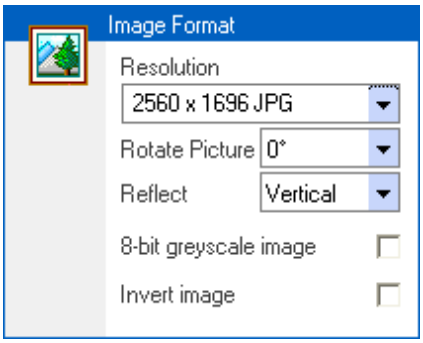
The sample (test gel) is represented as underexposed, normal and overexposed acquisition (left to right).

The function ***White Adjustment*** is an interesting function for light field applications in order to take influence on the image quality.

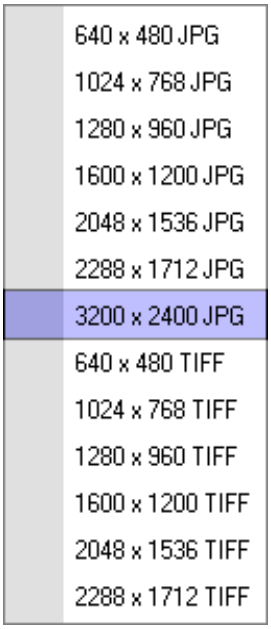


The White Adjustment provides a colour rendition true to life at different light sources (e.g. white light in the dark hood, room light). Should the automatic function can not realise a satisfying colour rendition, 4 other functions for the White Adjustment are available.

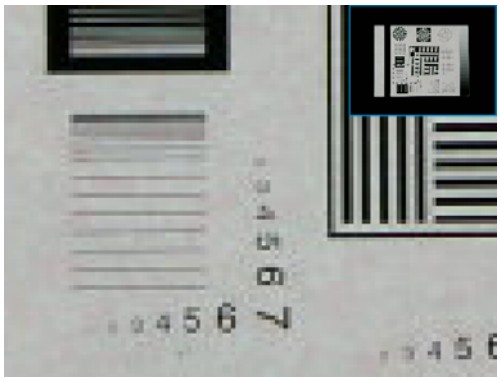
After the creation of a *Test Image* you see the image in a resolution of 640 x 480, however, here you can already judge the image quality (e.g. Exposure, Focus). The function *Test Image* is made for the quick testing of your settings.
All settings in the ***Standard Mode*** and ***Professional Mode*** have influence on the acquisition of the Test Image – except the resolution.

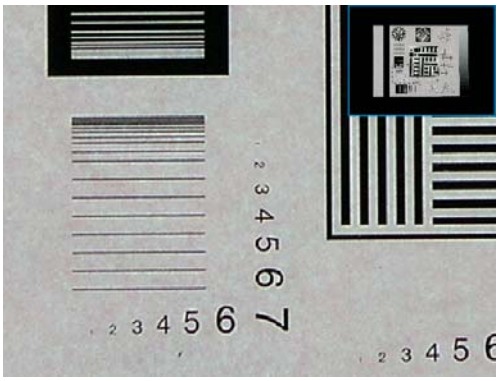


In order to finally generate the image in the desired format, use the function ***Exposure***. Previously, select the resolution and the required image format in the function ***Image Format***.



The transfer time of the image data from the camera to the exposure window via USB port do not only depend on the resolution but also on the chosen format. The transfer of a JPG image in the format 3200 x 2400 takes approx. 15 seconds at a Standard PC. In contrast, a TIF image in the format 2288 x 1712 takes approx. 90 seconds. Therefore, it is more meaningful to generate a high-resolution JPG image with a transfer time x, as an essentially more badly resoluted TIF image with the same transfer time.





Both acquisitions clearly show the difference between a Test Image (left) and an acquisition with high resolution (right), with a chosen image area in the zoom window (sell right upper corner).

After the creation of a *Test Image* or an *Exposure* you can enlarge any range desired with the button ***Zoom***. By activating the function *Zoom window,* an additional window is opened in the right upper corner of the *Image window*. The size and position of the zoom window is fixed and cannot be changed.

In the *Zoom window*, the currently processed image is completely shown. For selecting an excerpt, go with the mouse pointer into the Zoom window and draw a rectangle over the corresponding area. The selected area is represented in the *Processing window.*

With the activation of the button ***Proceed***, the image in the exposure window will be transferred into the database of argusX1. Please note that the transfer of *Test images* is not supported! Now, close the camera control window.

Module FireWire camera:

You can use CCD FireWire cameras type Felix 5000, 6000, 6020 and 7000 equipped with argus X1 software for the image acquisition.
The control and the power supply of the cameras effect from a FireWire lead connecting camera and PC.

- External provision of electricity is not necessary.

For activating the camera please press the button **FireWire camera** in the software.

If no camera type 5000, 6000, 6020, 7000 is connected to the PC or no driver unit had been installed, you will receive the following error message:

In this case please exit argusX1 and check the installation of the leads as well as the driver unit.

The exposure window is divided into 4 ranges:

- camera
- method
- operating functions for the camera control
- image window

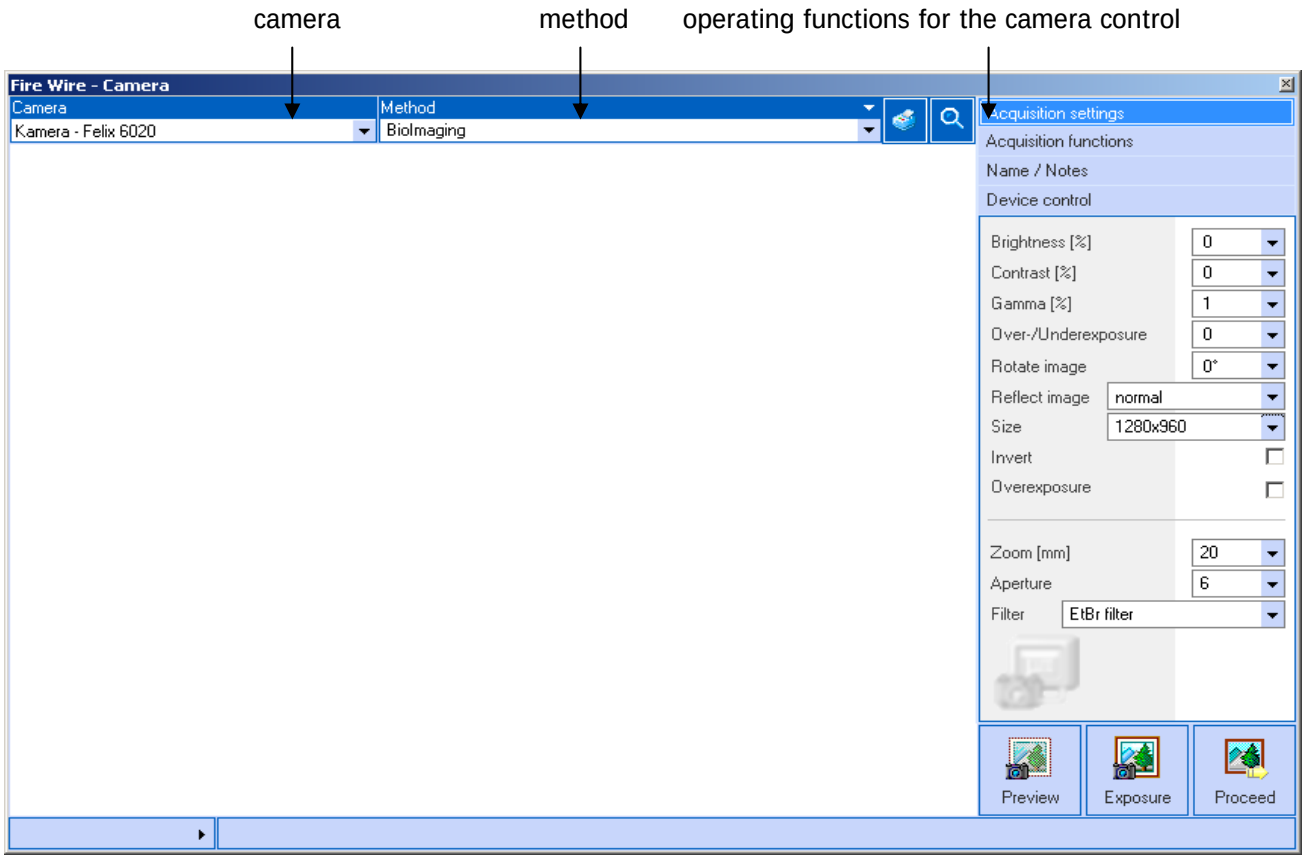
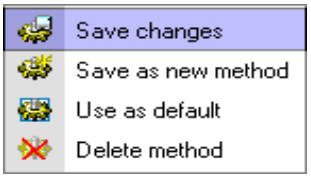


image window

The camera is in an operational condition if the image could be opened without receiving an error message.

All settings of the image acquisition described in the following can be **saved as a method**. In this way, you can recall this method at the next gel of the same type and all optimal settings are immediately at your disposal.



Open the menu window **Methods** with a click on the left mouse button on the white triangle and choose the function **Save as new method.** The current chosen parameters and settings are applied as new method and a standardised basic name (structure: new method, date, time) is assigned to this method. You can change this basic name. Please note that you must confirm the new name with the function **Save changes otherwise, the old method name remains.**

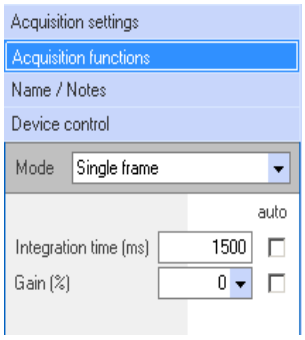
One of your created methods can be defined as standard method. This definition can be changed by appointing another method as standard anytime. You should always use the most frequently used method as standard as this will be automatically loaded with the start of the exposure window.

The first step of the exposure of an image is the activation of the button ***Live image***.
This mode is mainly used for the adjustment of the samples (e.g. gels, blots) on the transilluminator and the setting of the zoom. The ***Live image*** is displayed without any delay and with full camera resolution i.e. the scrolling of the sample on the transilluminator is displayed without delay on the PC monitor.

Depending on the lighting conditions the camera tries to display an optimal image in the live image mode. For that purpose the camera changes step-by-step the exposure time within the control cycle.
The control comprises an exposure time range from 1 ms up to 1000 ms.

The maximal exposure time of the camera is 60 sec. To receive a contemporary, optimal image, the exposure time had been reduced to 1000 ms in the automatic control cycle. The exposure conditions are another reason as the mode *Live image* is only applied for the adjustment of the sample with white top-light. No exposure time above 1000 ms is expected with opened aperture.

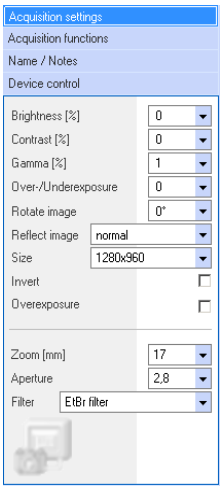
There is the possibility to register manually a higher exposure time (e.g. 1500 ms) under **exposure functions** and to use it for Live Image display.



Aperture, zoom and focus are adjusted manually with the objective. Once the focus has been optimal set you can use this data in the whole zoom range. We recommend fixing the optimal focus with the setscrew at the objective.

After adjusting the sample on the transilluminator and adapting the zoom range with activated white top-light in the dark hood only the fluorescent light (e.g. UV or blue light) can be used for the excitation of the sample structure.

Please note that in connection with the activation of the fluorescent light source the white top-light has to be necessarily switched off. The camera is still in the mode *Live image* and shows you the fluorescent sample structure.



This image can be optimized and adjusted with several functions:

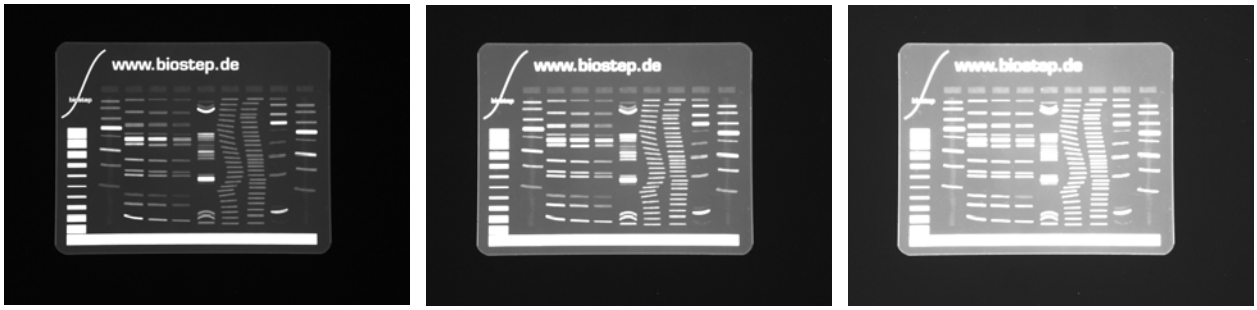
- **Intensity** [range -25 up to +75], [basic setting 0]
  values > 0 produce a lighter image, values < 0 produce a darker image

- **Contrast** [range -50 up to +50], [basic setting 0]
  values > 0 produce images richer in contrast, values < 0 produce images lower in contrast

With the functions intensity and contrast the tone range of an image can be changed. Compared to the gamma correction the pixels are modified in the same way with those 2 functions.

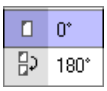
- **Gamma** [range 0.4 up to 2.5], [basic setting 1.0]
  The gamma value shows the allocation of the greyscales in the image. The linear allocation of the greyscales is changed with the gamma correction in the way that single ranges (e.g. weak bands) are more strengthened than others. The adjustments can be used for documentations and publications but only with a gamma value of 1.0 an exact quantification of the samples is possible.

- **Over-/Underexposure** [range -50 up to +50], [basic setting 0]
  This function has only influence on the acquisition in the context of the exposure functions and corresponds a manual lighting time. Please set values > 0 to expose the samples a longer time to get a lighter exposure. Please set values < 0 to expose the samples a shorter time to get a darker exposure. Using the function *Over-/Underexposure* only makes sense if you work with exposure automatic and do not want to use any manual settings for Aperture and Integration time.

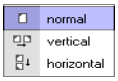


The samples (test gels) have been taken with the exposure level – 30, 0, + 30 (left to right). All other parameters has been constant.

- **Rotating image** [range 0 °, 180 °],[basic setting 0 °]
  Corresponding to the chosen option the image is turned in the exposure window.



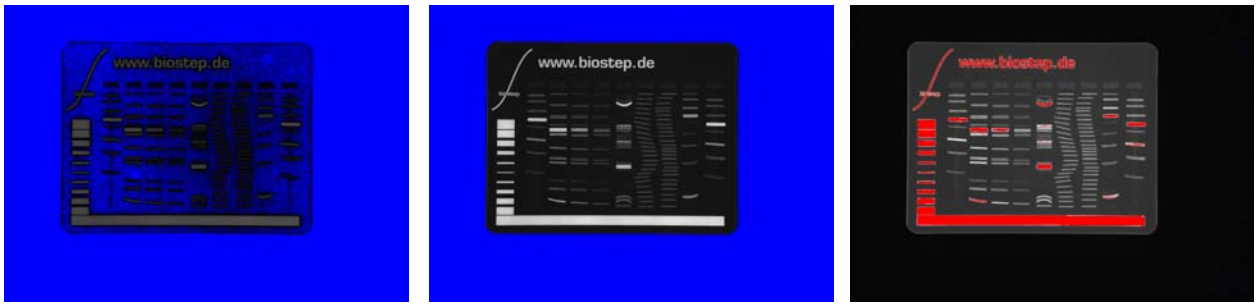
- **Reflecting image** [range normal, vertical, horizontal]
  Corresponding to the chosen option the image is reflected in the exposure window.



- **Size** [range depends on the resolution of the camera]

- **Reverse** [range switch on/ switch off]
  Use this function if you favour dark information on light background when watching fluorescent exposures.

- **Overexposure** [range switch on/switch off]
  This function helps to mark areas in the images overexposed/underexposed.
  The parameters (colour, fast value) can be set in the menu under ***settings / image processing/ light control.*** This function is recommended when checking areas of the sample which have to be quantified for over/underexposure.



The sample (test gel) has been taken as underexposed/normal/overexposed (left to right).

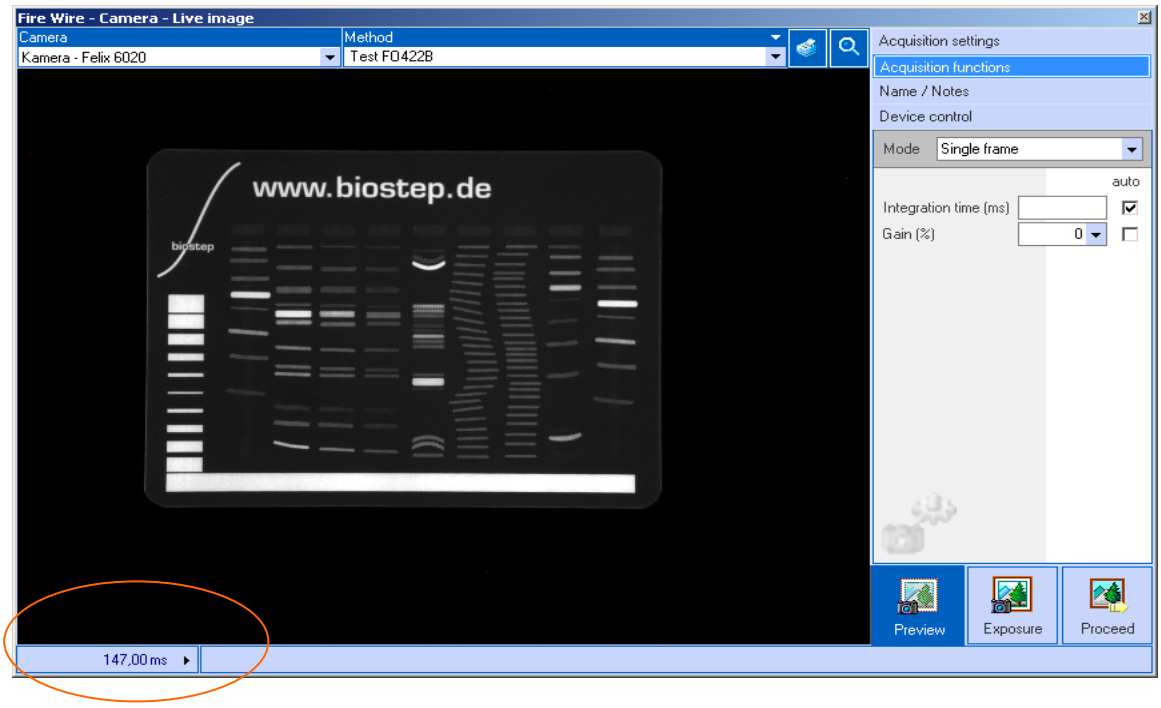
The functions ***Zoom, Aperture and Filter*** are normal memo fields. With these fields you can set the optimal value determined for a special sample type. With the saving of these values also other values are saved and can be set manually and can related to for further exposures.

Is the sample based on the settings of the objective and the lighting time optimal displayed, this lighting time can be used for the real exposure in taking over this time with a click on the triangle on the right-hand side of the indicated time.

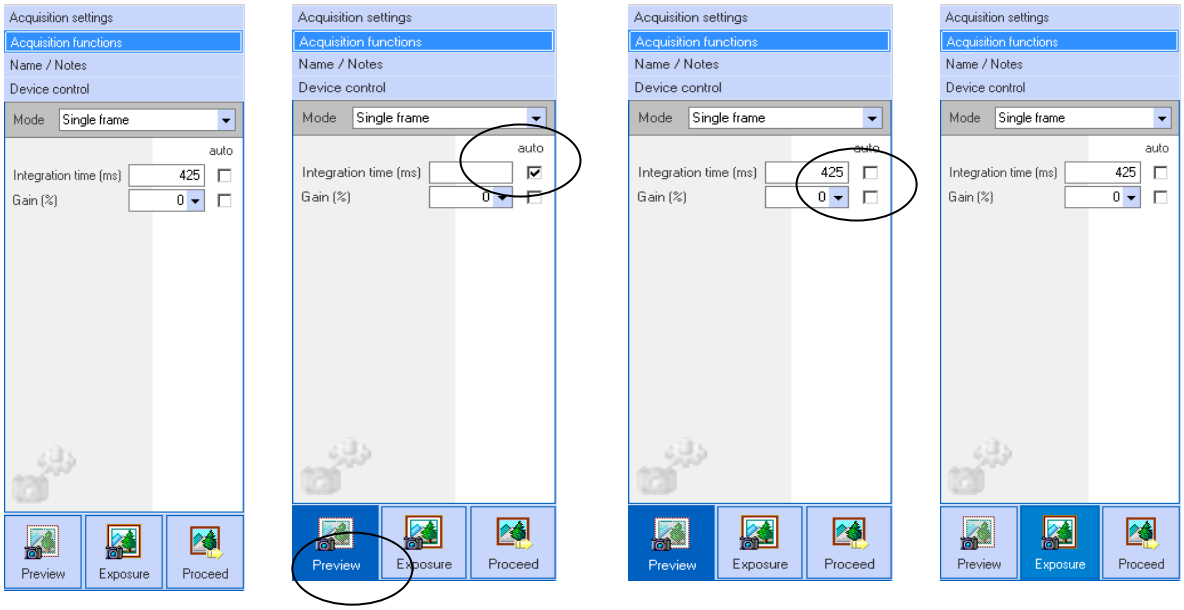
This value is now registered under ***exposure settings / exposure time*** and the automatic readjustment of the exposure time is finished in the same step. For further acquisitions of the live image only the registered exposure value will be used. Now you can finally trim the aperture for the optimisation of the exposure and adjust the registered exposure time correspondingly the requirements.

Afterwards, please press the button ***exposure.*** The live image generation will be finished and triggers the generation of the image as well as whose display in the exposure window corresponding to the selected settings.

If the image corresponds to your requirements you can switch off the fluorescent light sources switched on for the exposure of the image.



Another approach to the exposure of an image proved of value in practice is the fixed adjustment of the exposure time that can be defined for a special type of sample.
This value will be saved and be available for further exposures.

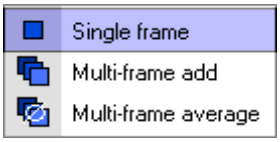


Selecting the method | Activation of live image mode | Deactivation automatic | Exposure of the image

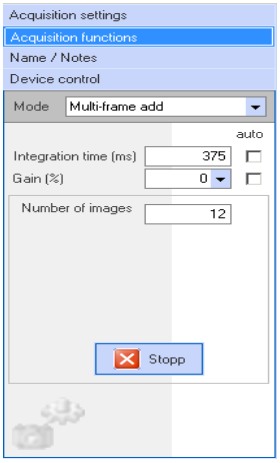
After selecting the method already containing a set exposure time, the mode ***Live image*** will be started and the sample will be adjusted on the transilluminator and irradiated with white light (top-light). Furthermore, the settings for aperture and zoom saved in the method will be adjusted manually with the objective and checked whether the information of the filter correspond to the actual conditions.

After adjusting the sample the white top-light is switched off and the fluorescent light switched on. The value of the exposure time saved in the method is ideal for exposures e.g. with fluorescent light. In order that the exposure time is effective please deactivate the function ***auto (automatic)***. Now you can view the image based on this exposure time. The fine adjustment (optimisation of the image regarding overexposed areas) can be quickly realized with the adjustment of the apertures values. Please turn the aperture slightly rightwards (increasing the sensitivity = lighter image) or leftwards (decreasing the sensitivity = darker image).
If the optimal settings are reached, please press the button ***Exposure*** and after the image has been displayed you can switch off the fluorescent light.

You can not only take single images but also add up several images ***(Multi-frame add)*** or average of several images ***(Multi-frame average).***

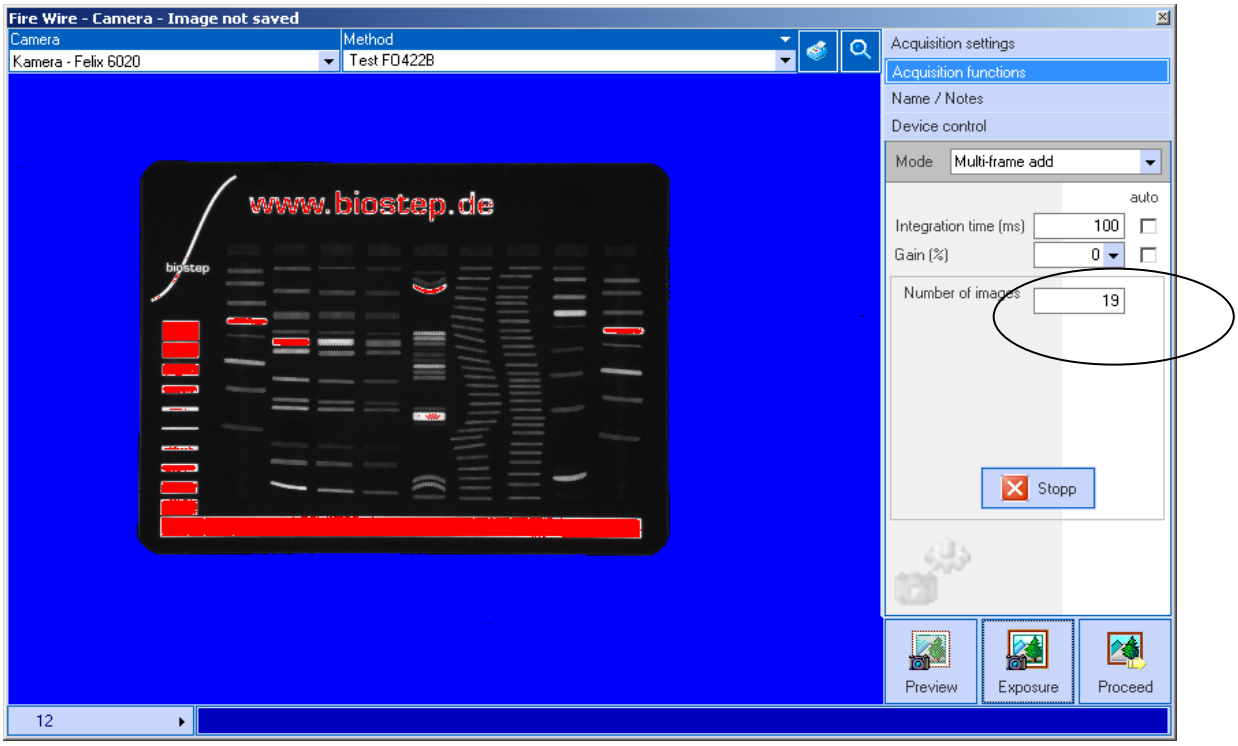


The function ***Multi-frame add*** is useful if dynamic ranges with max 16 bit are required as present e.g. 12 bit cameras.
By the addition of several images a gradual larger range is available for the linear acquisition of strong and weak bands.
Without this function strong fluorescent bands can already be overexposed before weak fluorescent bands can even be acquired.

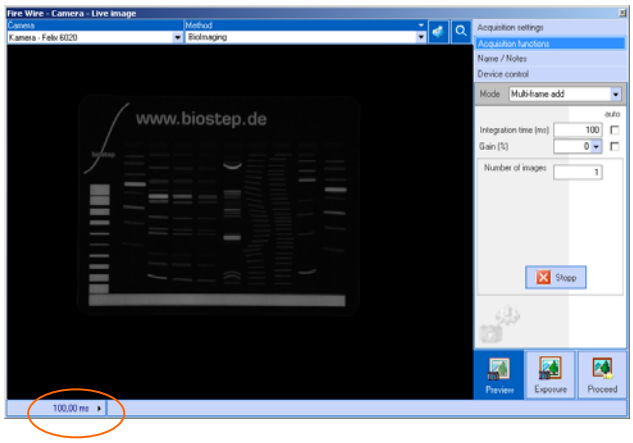


Important information: Only band structures being acquired within the set exposure time can be add up. Because 0 + 0 + 0 + 0 = 0!

For the use of this function please enter an exposure time as well as the number of the exposures [range 1 – 99] to be added.

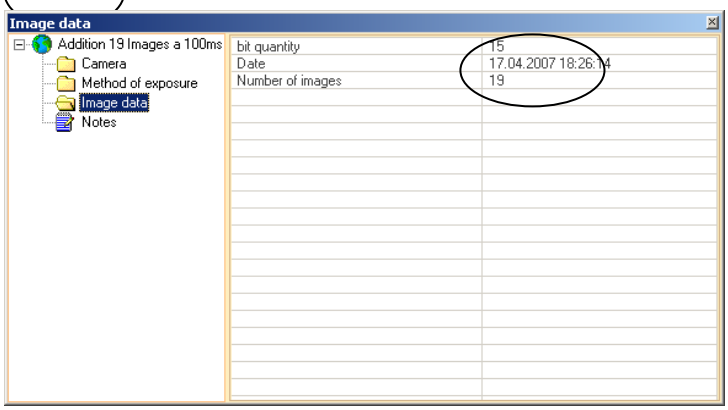


Pressing the button ***exposure*** starts the activation of the operation. You can see the numbers of the already added images on the bottom of the left angle. With pressing the button ***Stop,*** the operation will be finished. The images being added up until break are used for the final exposure displayed in the exposure window.



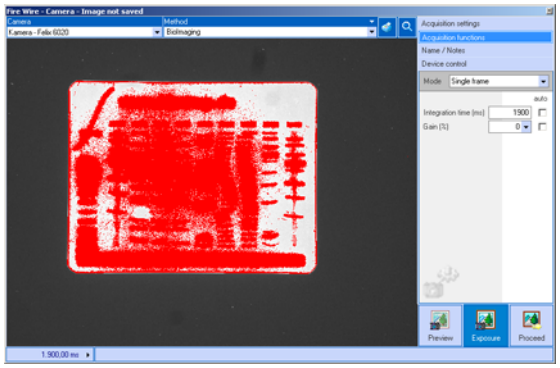
Exposure of an image with 100 ms (no addition)

The left picture shows the exposure of an image with an exposure time of 100 ms - no images have been added.
In the picture below-mentioned 19 images with an exposure time of 100 ms each has been added up. Although being exposed 1900 ms only a small area is overexposed – the other areas are completely quantifiable. This is the result of the bit deepness of 15 bit effecting form the addition of 19 images.

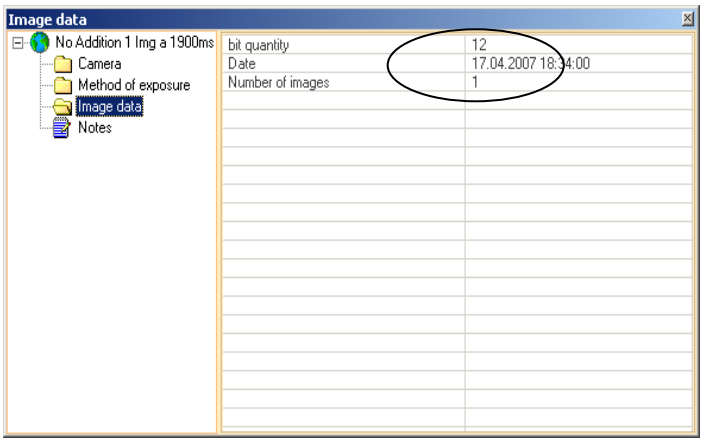


Addition of 19 images with 100 ms each;
Achieved bit deepness 15 bit

Please compare the exposure of an image with an identical entire exposure time of 1900 ms without addition. The achieved dynamic range comprises the already existing bit deepness of 12 bit of the camera. Due to this reason the image is overexposed and not suitable anymore for the quantitative analysis.



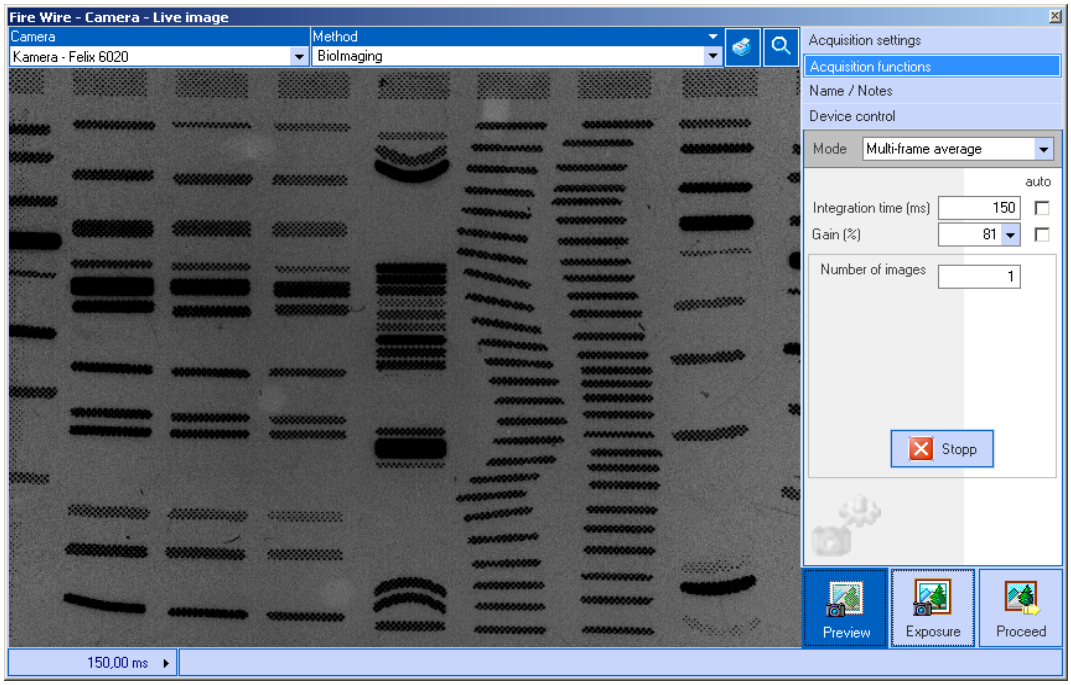
Exposure of an image with 1900 ms (no addition);
Achieved bit deepness 12 bit

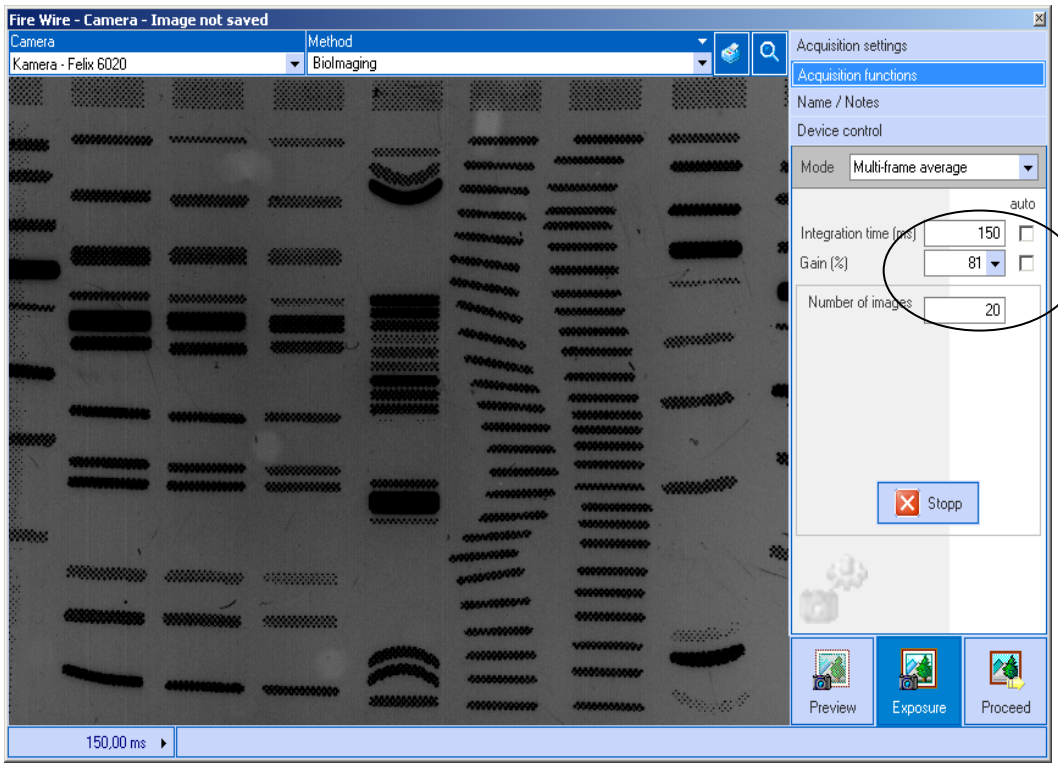


The second function available (***Multi-frame average***) is used for exposures with a force background or image noise.

A high image noise can occur e.g. if there is a set short exposure time with a gain of the camera more than 50 to reach a high exposure sensitivity.

By averaging several images the image noise is nearly eliminated and the resulting image appears considerably “silent”.



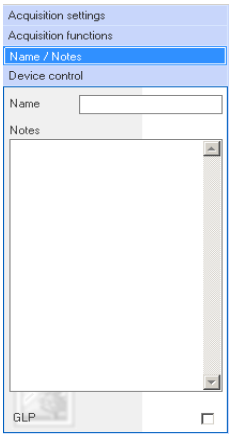


The upper image shows a single exposure with 150 ms and is characterized by a strong image noise. The second image is based on the averaging of 20 images with 150 ms each and is characterized by a low-noise background.

Please press the button zoom image to blow up a special area of an image.

By activating the function ***Zoom image*** an extra window will be opened in the right upper corner of the image window. Size and position of the window corner are fixed and cannot be changed. The zoom window displays the active processed image. For selecting a special area please go with the mouse pointer into the zoom window and draw a rectangle over the corresponding area. The area will be displayed in the processing window.

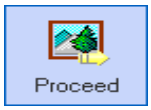
Furthermore, the image shown in the exposure window can be directly printed with the function ***Fast print***. Before using this function for the first time please select the photomaster generally used with the function ***Settings***



Before printing or taking over the image in the argus database you can register a special sample name and detailed information of the sample in the category ***Name/Notes***.

These notes will be saved to the image in the argus X1 database and be searched by full text search within. If no name is registered argus X1 is generating automatically a name. You can assign a basic name for the automatic generation with the function ***Settings***.

The function ***GLP*** is only available with the additional activated module GLP.

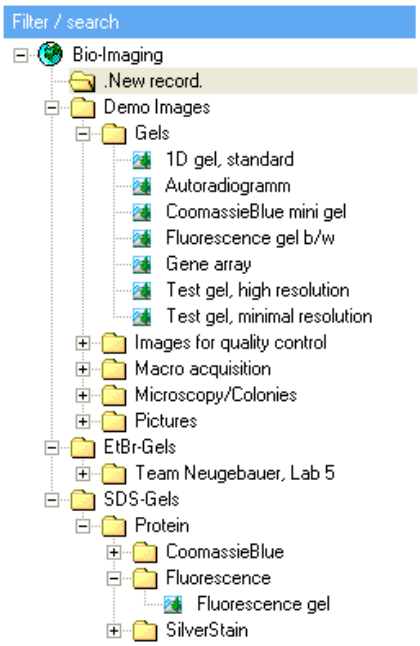


With pressing the button ***Proceed***, the image in the exposure window will be transferred into the database. Only images taken with the function Exposure can be transferred. Please note that the transfer of test images is not supported!

Now, close the camera control window.

Post-processing and display modes

The database window contains all images taken and imported with argusX1. These images and all their proper information are saved in the argusX1 database. Formulated in another way, the database window is the representation of the saved image data in the database. The design is similar to the Windows Explorer in order to use the functions without a long training.



A name is automatically generated for images, which were not named in the *Exposure window,* using the segments Date and Time (e.g. “Img 2004.10.05 13:03:23”).

By clicking on a selected image, it will be shown in the *Processing window* and can consequently be processed, exported and/or printed.

All necessary functions for the post-processing of the image are available in the vertical middle bar of the program surface:

- Undo
- Zoom window
- Adjust image size to window
- Rotate
- Reflect
- Functions for image processing (Filter)
- Invert
- Convert into 8 bit greyscale
- Notes
- Crop
- Copy into clipboard
- Histogram
- Image parameters and notes
- Exposure control

Undo

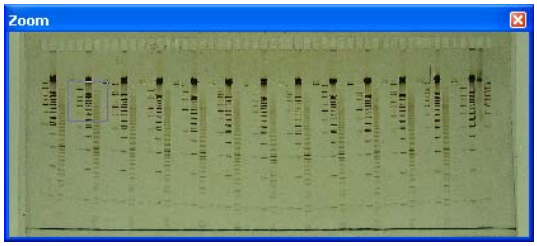
The function *Undo* enables a step-wise reverse of the image processing. Maximum are the last 5 processing steps after open the image or after the last save.

Generally valid for the post-processing and display modes:

If modifications should be cancelled, simply use the function *Undo*; or if all processing steps should be disregarded, just reload the image!

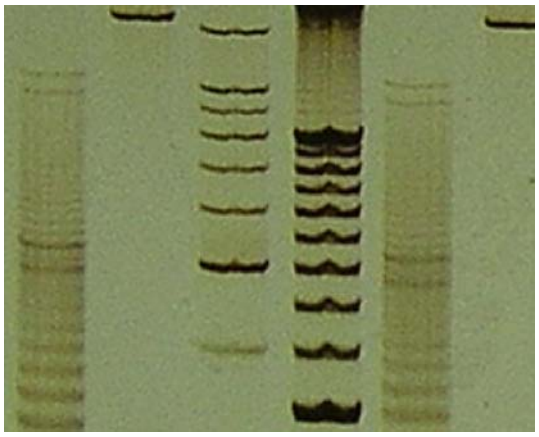
Zoom Window

By activating the function *Zoom window,* an additional window is opened. The size of the zoom window can be changed if necessary. For selecting an excerpt, go with the mouse pointer into the Zoom window and draw a rectangle over the corresponding area. The selected area is represented in the *Processing window.*



Adjust to Window

With this function the size of the image in the processing window is adjusted to the size of this window.



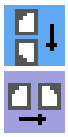
Rotate

The function *Rotate* consists of the ***Rotate by free angle*** and the both selectable, fixed functions ***Rotate by 90°*** and ***Rotate by 180°*** (active with the triangle on the right of the icon).

By activating the button *Rotate* you can turn the image in an arbitrary angle. With the left mouse button, you can set the determination of a spin axis and an arbitrary angle.

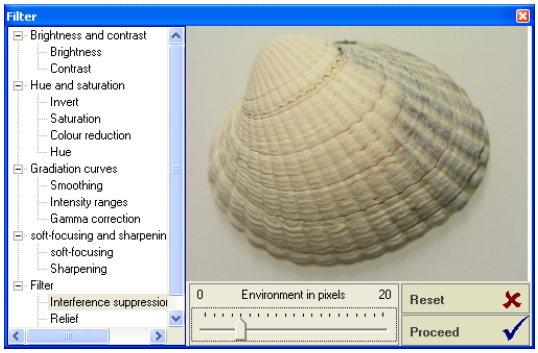
Reflect

The function *Reflect* serves for the reflection of your image by the horizontal or vertical axis.



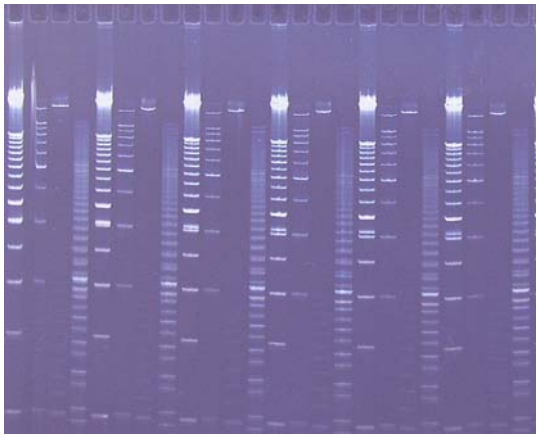
Functions of Image Processing

This function serves for the post-processing of an image with different filters and image corrections. Test these functions, however, only use them for the improvement of the optical quality – **not for images which should be quantified!**



Invert

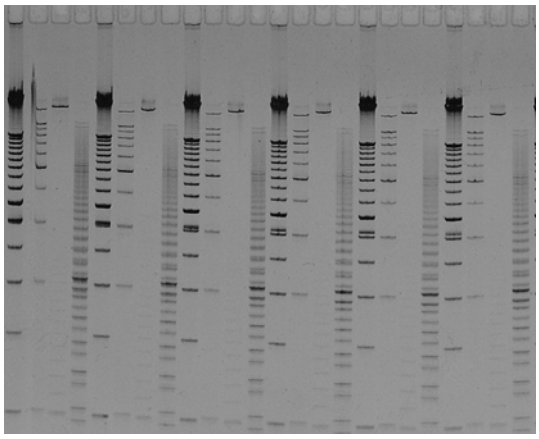
This function serves for the inversion of the colour/greyscales in the image.



Convert into 8 bit greyscale

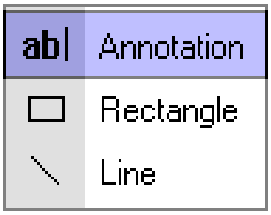
This function serves for the transformation of a coloured image into a greyscale image.

The report about information loss is necessary as the colour channels of the images are deleted. Therefore confirm with *Yes* if you really want to save the image as greyscale image.

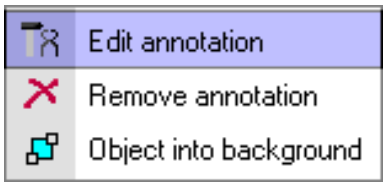


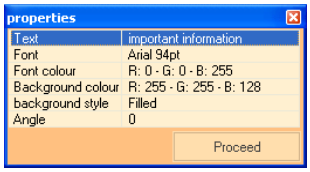
Notes

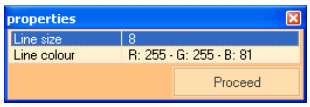
The function *Notes* consists of the 3 following functions ***Annotation***, ***Rectangle*** and ***Line***. The menu for the selection of these functions can be activated with a click on the left mouse button on the triangle right to the icon.
Inserting the position of the annotation, rectangle as well as the line is made with the left mouse button in the Image window.

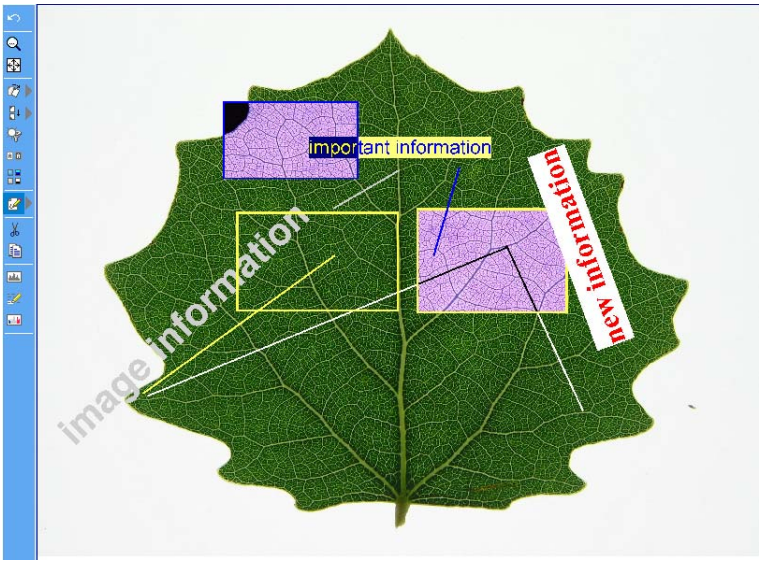


For changing the formatting you can open the continuing functions with a double click on the respective object.









Crop

The function *Crop* serves for the deletion of the image area outside a selected rectangle. Due to that you first have to choose a rectangular area which shall furthermore be at your disposal and be saved. The rest of the image will be eliminated after using the button *Crop.* So it will not take up unnecessary saving capacity on your PC.

Copy into clipboard

With the function *Clipboard,* it is possible to copy your image into other Windows applications without greater inter steps. Select a rectangular image area that should be exported with the function *Zoom*, use the button *Clipboard* and load your data from the clipboard into your application (e.g. WORD).

Histogram

In the histogram the pixel quantity for each brightness step is represented. It enables a statement about the tonal value range of the image

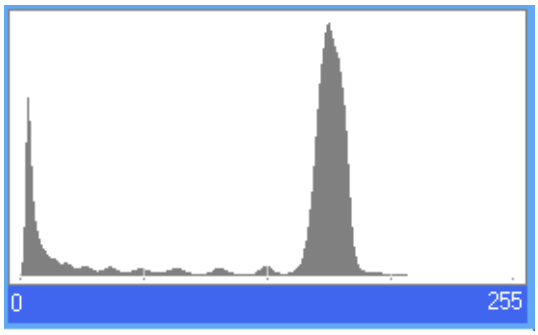
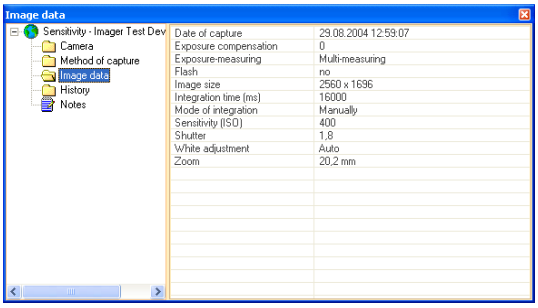


Image parameters and notes

The function image parameters and notes informs about all parameters documented at the image exposure. All important acquisition conditions are saved to each image and are available for a future classification and quality evaluation. You can judge the reproducibility or comparability of the images.



Exposure control

Areas in the image that are over- or underexposed can be determined and indicated with the function *Exposure control*. The parameters for this function can be changed in the menu *Settings* under the category *Image processing/Exposure control*.

Load a new image

For creating or importing a new image, you have **2** possibilities:

Of course, you can produce another image with the camera. Please follow therefore the procedure described in the short operating instruction.

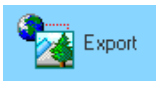
You can also load other image data using the button *Import.* Select the corresponding image (TIFF-, JPEG-, PCX-, PC Paintbrush and Bitmap graphics) and insert it into the database of argusX1. This is also valid for images made via scanner.

In argusX1, you can subject these images to the post-processing, archiving and export if required.

Save, export and print images

The function ***Save*** serves for the saving of the processing steps made at the loaded image. The former version will be overwritten. The save process even takes place without further queries because of the database structure of argusX1.

By saving the current processing conditions, the data saved in the function *Undo* are automatically deleted.



With the function ***Export,*** the loaded image can be saved in its actual processing conditions in a foreign format supported by argusX1 on a data carrier.

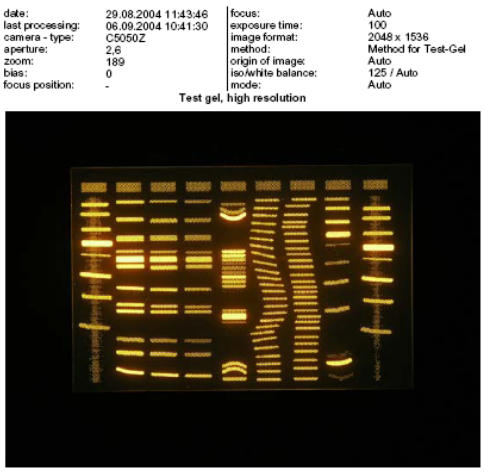
argusX1 automatically generates a file name when exporting the image using the name of the image in the database. If the name in the database contains signs that are not admissible for Windows file names (e.g / \ ? *), argusX1 will automatically replace them with an underscore "_".

argusX1 uses the values determined in the settings [*File*|*Settings*|*Image processing*|*Standard export format*] for the export format and the storage space. You might change all proposed settings or just accept them.

The function ***Print*** consists of 2 sub-functions:

The function ***Quick print*** is realised with the button *Print*.
The function ***Choice print*** is activated by the triangle right to the button *Print*. The print-out of the image is based on print templates. These are adjusted to a specific format (e.g. A6, A4), contain the image that has to be printed as well as corresponding information (e.g. name, date of creation, acquisition parameter, notes). Each template has its own specific layout and information structure.

Before using the function *Quick print* for the first time, please select the standard print template in the menu *Settings* [*File*|*Settings*|*Standard print template*] which you will use most frequently. When activating this function, the image in the processing window will be printed immediately on the selected template.



With the activation of the function *Choice print* square asked to select a print template from the list of the available ones. In the following window you can decide whether the print-out should be made on the chosen printer as preview or in another file.

In independence of the present printer (A4 / A6 or any format) it can come to faulty print outs. This also depends on the available report formats and can individually be adjusted (Edition mode).

You might design your individual print template. Should you face any difficulties, please do not hesitate to contact us. Please phone us +49-6408-6072 or e-mail us to info@biotec-fischer.de – we will be glad to be of assistance. In the sense of short operating instructions, an exhausting explanation is unfortunately impossible due to the multiplicity of variations of printers, formats and customer wishes.